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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/625,982 | 07/24/2003 | David C. Crich | 27611/38637A | 1704 |

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EXAMINER

VOLLANO, JEAN F

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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1621

DATE MAILED: 05/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/625,982 | CRICH ET AL. | |
| | Examiner | Art Unit | |
| | Jean F. Vollano | 1621 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 26 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-4,7-10,12-20,24 and 25 is/are allowed.
- 6) ☒ Claim(s) 5,6,11,21, 22, 23 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-25, drawn to a fluorine borane sulfide, a composition thereof and methods of using the borane sulfide classified in class 568, subclass boron subclasses 1-7.
 - II. Claim 26, drawn to a process of manufacturing a sulfide, classified in class 568, subclass 38-69.

The inventions are distinct, each from the other because of the following reasons:

Group I is drawn to borane sulfides which must contain the BH_3 molecule on the sulfur. Also included in this group is a borane sulfide composition and the method of using the borane sulfides. Group II is drawn to a method of making a halogen substituted thioether which does not contain any boron in any step of the process. The groups are patentably distinct and are found in different subclasses and a search for Group II would not cover any search for Group I both on line in Chemical abstracts and in the patent search.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and the search required for Group II is not required for Group I, restriction for examination purposes as indicated is proper.

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Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

2. During a telephone conversation with Mr Jim Napoli on May 13, 2004 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-25. Affirmation of this election must be made by applicant in replying to this Office action. Claim 26 is withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

3. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 112

4. Claims 5-6, 11, and 21-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5 recites the limitation of "The borane-sulfide of claim 1 containing at least 35%, by weight of fluorine sulfide, fluorine." This claim is confusing as written as to the metes and

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bounds that are being claimed as the instant invention. Does this limitation mean that there is a mixture being claimed of a compound of formula 1 with a non borane fluorosulfide? Or does the limitation mean that the sulfide sulfur and the fluorides present must add up to 35% by weight of the total molecule? Or does this mean that the fluoride on the sulfide must be 35% by weight of the whole molecule? Or does this limitation mean something else. As written the limitation is vague and indefinite. The same problem also occurs in claim 6.

Claim 11 is confusing in how it differs from claim 1 in that there is no other component mentioned. If there is a little solvent left after drying the compound would that be a composition being claimed? If there is nothing else but the compound would that also be a composition? The claim seems to be claiming the claim 1 compound as a claim 11 composition. As written the claim is confusing and would appear almost to be a substantial duplicate since the compound could satisfy the composition claim as written.

Claim 21 recites the limitation wherein "a product of the hydroboration reaction is treated with a base and an oxidizing agent to provide an alcohol". This claim is confusing as written. The claim seems to be making any alcohol by using any product (which includes by products of the hydroboration reaction) to make any alcohol. As written the final product is unclear and what is being done to what reactant is unclear. If the alcohol produced is made by further reacting the boronhydrated alkene or alkyne with an oxidizing agent in the presence of a base to form the corresponding alcohol (i.e. the alcohol that is produced from the alkene or alkyne that has undergone the hydroboration reaction) then that should clearly be stated. The claim must be written in a clear and concise manner pointing out the metes and bounds that are being claimed

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as the instant invention. As written it is not clear what product or byproduct is being further reacted and what type of an alcohol is being produced (could the alcohol be a phenol?).

Claim 22 recites the limitation of “claim 18 ... the oxidizing agent is hydrogen peroxide”. There is no oxidizing agent in claim 18 or any claim it is dependent on. Also why would one use an oxidizing agent in a reductive type process?

Claim 23 recites a method of reducing an organic “functionality”. It is unclear what is exactly meant by the term. Is a methyl group an organic functionality? A methyl group is a functional group (i.e. alkane). Is a carbonyl an organic functionality (it does have a oxygen)? Or is an alcohol an organic functionality? Is a benzene ring an organic functionality? Is a phenol an organic functionality? What about a pyrrole? The term as written is confusing as to the metes and bounds that is being claimed as part of the instant invention. When this is clarified there may be a 112 first paragraph scope of enablement issue since the claim seems to be claiming that any functionality, whatever that is, may be reduced by using the compound of claim 1.

5. Claims 1-4, 7-10, 12 –20 and 24-25 are allowed.

The art and prior art (Organic Letters 10/2002, US 5,171,736, US5,567,849 and CA:133:335260) teach various borane sulfides

Organic Letters is by the same inventive entity and was published over a year after filing but there is a provisional application which contains the subject matter that was filed by applicant on July 25, 2002. The subject matter is fluorine dimethyl borane sulfide and a method of use for making alcohols.

US 5,171,736 and US 5,567,849 teach borane sulfides. However the borane sulfide are all hydrocarbon and not fluorine substituted hydrocarbons.

CA:133:335260 teach unsubstituted hydrocarbon borane sulfides.

The prior art does not anticipate or suggest the instant invention as it is being claimed.

6. The examiner notes there appears to be an IDS filed by applicant on 4/9/2004. However the IDS has not been processed and a copy placed in the record as of today so the examiner will review the file as part of the next office action. The examiner wants applicant to know that the papers filed 4/9/2004 have been received by the patent office.


7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean F. Vollano whose telephone number is 571-2720648. The examiner can normally be reached on Monday-Thursday 6:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272- 0646. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Jean F. Vollano
Primary Examiner
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May 14, 2004